U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION II
EMERGENCY & REMEDIAL RESPONSE DIVISION
FIVE-YEAR REVIEW (Type Ia)
NL INDUSTRIES, INC. SITE (Pedricktown, New Jersey)

I. Introduction

Authority Statement. Purpose. The U.S. Environmental Protection Agency (EPA) Region II conducted this review pursuant to Section 121(c) of the Comprehensive Environmental Response, Compensation and Liability Act, Section 300.430(f)(4)(ii) of the National Oil and Hazardous Substances Pollution Contingency Plan, and OSWER Directives 9355.7-02 (May 23, 1991), and 9355.7-02A (July 26, 1994). This review is a statutory review. The purpose of a five-year review is to ensure that a remedial action remains protective of public health and the environment and is functioning as designed. This review (Type Ia) is applicable to a site at which response is ongoing.

Site Characteristics. The NL Industries, Inc. Site (Site) is an abandoned, secondary lead smelting facility, situated on 44 acres of land on Pennsgrove-Pedricktown Road, in Pedricktown, Salem County, New Jersey. A closed 5.6 acre landfill, which is maintained by NL Industries, is located on the northern portion of the Site, while the southern portion of the Site contains the industrial area. The West and East Streams, parts of which are intermittent tributaries of the Delaware River, border and receive surface runoff from the Site.

In 1972, the facility began the operation of recycling lead from spent batteries. The batteries were drained of sulfuric acid, crushed and then processed for lead recovery at the smelting facility, while the plastic and rubber casings and slag from the smelting process were disposed of in an on-Site landfill. Between 1973 and 1980, the New Jersey Department of Environmental Protection (NJDEP) noticed NL Industries with numerous violations of state air and water regulations.

NL Industries ceased smelting operations at the Site in May 1982. In February 1983, the facility was sold to National Smelting of New Jersey (NSNJ) and smelting operations recommenced. NSNJ ceased operations at the facility in January 1984 and filed for bankruptcy in March 1984.

In April 1986, NL Industries entered into an Administrative Order on Consent (AOC) with EPA for the performance of a Remedial Investigation and Feasibility Study (RI/FS) for the Site. The RI/FS for Operable Unit One (OU1) was completed in July 1993.

In March 1989, EPA initiated Phase I of a multi-phased Removal Action at the Site. Activities conducted as part of the Removal Action included; construction of a chain-link fence to enclose the former smelting plant, encapsulation of the on-Site slag piles, removal of over 40,000 pounds of the most toxic and reactive materials from the Site, emptying of containers stored in the open and staging of their contents under existing covered areas, reinforcement of slag bin retaining walls which were in

danger of collapse, and removal of the most highly contaminated sediment and soil from the floodplain of the West Stream. In addition, silt-fencing was installed along the West Stream in order to minimize migration of the remaining contaminated sediment and floodplain soil until remediation of these materials can occur.

Recognizing the complexity of the Site, EPA determined that it was appropriate to address remediation of the Site in separate operable units. In September 1991, EPA issued the Operable Unit Two (OU2) Record of Decision (ROD) for the Site, which selected a remedy for slag and lead oxide piles remaining at the Site, contaminated surfaces and debris and contaminated standing water. EPA issued a Unilateral Administrative Order to a group of potentially responsible parties (PRPs) for performance of the OU2 remedy in March 1992. In July 1994, EPA signed the OU1 ROD for the Site, which selected a remedy for contaminated soil, sediment and groundwater remaining at the Site. In June 1996, five PRPs entered into an AOC with EPA for design of the OU1 remedy.

II. Discussion of Remedial Objectives; Areas of Noncompliance

The OU2 ROD selected an Early Remedial Action for the Site with the intent of preventing further releases of contaminants from areas of hazardous surface contamination while the Site-wide RI/FS was being conducted. The remedy selected in the OU2 ROD consisted of the following components: on-Site solidification/stabilization of slag and lead oxide piles with on-Site placement of these materials; the recycling of appropriate materials; decontamination of buildings, paved surfaces, equipment and debris, with off-Site treatment and disposal of materials that cannot be decontaminated; the collection of decontamination water and standing water with off-Site treatment and disposal; and the decontamination and unplugging of drains. In March 1992, EPA issued an Explanation of Significant Differences (ESD) which modified the remedy to allow for off-Site treatment and off-Site disposal, or on-Site treatment and off-Site disposal of the slag and lead oxide piles.

The PRPs' consultant began implementation of the OU2 remedy in October 1992. The OU2 remedy was considered by EPA to be complete in September 1995. As part of the remedial action, slag piles at the Site were stabilized on-Site and then analyzed utilizing the Toxicity Characteristic Leaching Procedure (TCLP) to ensure that they were no longer hazardous. After passing the TCLP test, the stabilized slag was transported off-Site and disposed of in a subtitle "D" (non-hazardous) landfill. Although not specifically provided for in the OU2 ROD, the PRPs dismantled the on-Site buildings. Subsequently, consistent with the selected remedy, the resulting scrap steel was decontaminated and transported off-Site for recycling. Furthermore, on-Site concrete, which passed the TCLP test, was utilized to backfill building basements or transported off-Site for beneficial use. Finally, low-lying areas of the Site were graded, as necessary, to prevent the accumulation of standing water.

Applicable or Relevant and Appropriate Requirements (ARARs) identified in the OU2 ROD for this remedy primarily concerned appropriate identification, transportation and disposal of hazardous materials. Materials which EPA allowed to remain at the Site were tested utilizing the TCLP test to

ensure that they were not considered characteristically hazardous according to the Resource Conservation and Recovery Act (RCRA). Furthermore, materials which were disposed of as non-hazardous waste were tested to ensure that they were not characteristically hazardous according to RCRA prior to disposal. Materials identified as RCRA-hazardous were disposed of in a RCRA subtitle "C" (hazardous) landfill.

The OU1 ROD addresses contaminated soil, sediment and groundwater which has been determined to present an unacceptable risk to human health or the environment. The remedial action objectives identified in the OU1 ROD are to leave no more than 500 parts per million (ppm) of lead in Site soil and stream sediments, and to restore the contaminated unconfined aquifer to drinking water standards for all contaminants. The remedy selected in the OU1 ROD consists of the following components: excavation of all soil contaminated with lead above the remedial action objective of 500 ppm, treatment via solidification/stabilization of soil classified as hazardous under RCRA, and disposal of the treated soil along with the non-hazardous soil in a landfill to be constructed at the Site; removal of contaminated sediment which contains above 500 ppm of lead from the East Stream and drainage channel north of Route 130 and treatment/disposal of the sediment in a manner similar to that for soil; extraction and treatment of contaminated groundwater with direct discharge of the treated groundwater to the Delaware River; and environmental monitoring to ensure the effectiveness of the remedy.

Pursuant to the June 1996 AOC, the PRPs prepared a remedial design work plan for design of the OU1 remedy which was approved by EPA in August 1997. Pre-design sampling activities are currently being conducted at the Site. Furthermore, in January 1997, the above-mentioned AOC was modified to provide for monthly inspection and maintenance of the silt-fencing installed along the West Stream. Therefore, this silt-fencing is currently being maintained by the PRPs.

As discussed in the OU1 ROD, the selected remedy is expected to comply with federal and state ARARs. ARARs identified in the OU1 ROD for the soil and sediment portions of the remedy include The Clean Water Act (Section 404), The Coastal Zone Management Act, New Jersey Freshwater Wetlands Regulations, Executive Orders 11988 (Floodplain Management) and 11990 (Protection of Wetlands), in addition to RCRA regulations dealing with the identification, handling, transport, treatment and disposal of hazardous waste. Furthermore, the groundwater portion of the remedy will be designed to achieve drinking water standards as well as standards for discharge to the Delaware River, which are to be provided in a NJPDES permit issued by the State of New Jersey.

III. Recommendations

EPA conducts a Type Ia five-year review at sites where the remedial actions are ongoing. The OU1 remedy is currently in the remedial design phase. The PRPs should complete the design and are expected to implement the remedial action identified in the OU1 ROD. There are no major changes in standards or ARARs known to the Remedial Project Manager which would effect the remedies selected at this site. Therefore these remedies will be protective of human health and the environment

when they are fully implemented. Until they are fully implemented, the PRPs need to keep the site secure, prevent contaminated groundwater from being used for drinking water and maintain the silt fencing to prevent further spread of contaminated soil. The silt fencing will reduce the deposition of contaminated stream sediments in the floodplain and minimize residential exposure to contaminants in the floodplain. Furthermore, as currently required in the 1996 AOC, potable wells in the vicinity of the site will be re-sampled to ensure that residents are not being exposed to Site-related contaminants at unacceptable levels.

IV. Statement of Protectiveness

I certify that the remedies selected for the Site remain protective of human health and the environment.

V. Next Five-Year Review

The next five-year review will be conducted by October 19, 2002.